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Substitute for form 1449A/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/142,684 (25,801)
		Filing Date	5/10/2002 7/23/2002
		First Named Inventor	Anthony C. Zuppono
		Art Unit	1753
		Examiner Name	Diamond, Alan D.
		Attorney Docket Number	22122878-12
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U.S. PATENT DOCUMENTS					
Examiner Initials ¹	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)			
FD	1	US- 4,590,507	05-20-1986	CAPASSO, et al.	—
FD	2	US- 4,686,550	08-11-1987	CAPASSO, et al.	—
FD	3	US- 4,849,799	07-18-1989	CAPASSO, et al.	—
FD	4	US- 5,311,009	05-10-1994	CAPASSO, et al.	—
FD	5	US- 6,084,173	07-04-2000	DIMATTEO	—
FD	6	US- 6,232,546	05-15-2001	DIMATTEO, et al.	—
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FOREIGN PATENT DOCUMENTS						
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/442,684 625,801
		Filing Date	5/10/2002 7/23/2002
		First Named Inventor	Anthony C. Zuppero
		Group Art Unit	1753
		Examiner Name	Diamond, Alan D.
		Attorney Docket Number	22122878-12
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OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
ADD	7	AUERBACH, Daniel J.; "Hitting the Surface--Softly"; Science, 294, (2001), pp. 2488-2489	-
ADD	8	BONDZIE, V. A., et al.; "Oxygen adsorption ... gold particles ... TiO ₂ (110)"; J. Vac. Sci. Tech. A., (1999) 17, pp. 1717 and figure 3	-
ADD	9	BOULTER, James; "Laboratory Measurement of OH ..."; http://pearl1.janl.gov/wsa2002/WSA2002talks.pdf (2002).	-
ADD	10	CHAN H.Y.H., et al.; "Methanol Oxidation On Palladium Compared To Rhodium..."; J. Catalysis v. 174(#2) pp. 191-200 (1998) (abstract and figure 1 only)	-
ADD	11	CHIANG, T.-C.; "Photoemission studies of quantum well states in thin films; Surf. Sci. Rpts.39 (2000) pp 181-235	-
ADD	12	CHUBB, D. L., et al; "Semiconductor Silicon as a Selective Emitter"; http://www.thermopv.org/TPV5-2-05-Chubb.pdf (abstract only) (Date Unknown).	-
ADD	13	CORCELLI, S. A., et al.; "Vibrational energy pooling in CO on NaCl(100) ..."; J. Chem. Phys.(2002) 116, pp. 8079-8092	-
ADD	14	DANESE, A., et al.; "Influence of the substrate electronic structure on metallic quantum well ..."; Prog. Surf. Sci., 67, (2001), pp 249-258	-
ADD	15	DAVIS, J. E., et al.; "Kinetics and dynamics of the dissociative chemisorption of oxygen on Ir(111)"; J. Chem. Phys. 107 (3), (1997), pp 943-952	-

Examiner Signature	<i>Alan D. Diamond</i>	Date Considered	6/1/04
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		Group Art Unit	1753
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ADD	16	DIEKHONER, L., et al.; "Parallel pathways in methanol... Pt(111)"; Surf. Sci. 409 (1998) pp 384-391	-
ADD	17	DIESING, D., et al.; "Aluminium oxide tunnel junctions..."; Thin Solid Films, Vol. 342 (1-2) (1999) pp. 282-290	-
ADD	18	DIMATTEO, R. S., et al.; "Enhanced photogeneration of carriers... vacuum gap"; Appl. Phys. Lett. (2001) 79, pp. 1894-1896	-
ADD	19	DIMATTEO, R. S., et al.; "Introduction to and Experimental Demonstration of Micron-gap ThermoPhotoVoltaics"; http://www.thermopv.org/37DiMatteo.html (abstract only) (Date Unknown)	-
ADD	20	DOGWILER, Urs, et al.; "Two-dimensional ... catalytically stabilized ... lean methane-air ..."; Combustion and Flame, (1999), 116(1,2), pp 243-258	-
ADD	21	ECHENIQUE, P. M., et al.; "Surface-state electron dynamics in noble metals"; Prog. Surf. Sci., 67, (2001), pp 271-283	-
ADD	22	ENDO, Makoto, et al.; "Oxidation of methanol ... on Pt(111) ..."; Surf. Sci. 441 (1999) L931-L937, Surf. Sci. Letters	-
ADD	23	FAN, C. Y., et al.; "The oxidation of CO on RuO2 ..."; J. Chem. Phys. 114, (2001), pp. 10058-10062	-
ADD	24	FANN, W.S., et al.; "Electron thermalization in gold"; Phys. Rev. B (1992) 46 pp. 13592-13595	-

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/142,604 625 801
		Filing Date	5/10/2002 7/23/2003
		First Named Inventor	Anthony C. Zupercro
		Group Art Unit	1753
		Examiner Name	Diamond, Alan D.
		Attorney Docket Number	22122878-12
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ADD	25	GEE, Adam T., et al.; "The dynamics of O ₂ adsorption on Pt(533)..."; J. Chem. Phys.(2000) 113, pp. 10333-10343	-
ADD	26	GERGEN, Brian, et al.; "Chemically Induced Electronic Excitations at Metal Surfaces"; Science, 294, (2001) pp. 2521-2523	-
ADD	27	GULIANTS, Elena A, et al.; "A 0.5-μm-thick polycrystalline silicon Schottky.."; Appl. Phys. Let., (2002), 80, pp. 1474-1476	-
ADD	28	GUMHALTER, B., et al.; "Effect of electronic relaxation ... adsorption reaction rates"; Phys. Rev. B (1984) 30 pp. 3179-3190	-
ADD	29	HALONEN, Lauri, et al.; "Reactivity of vibrationally excited methane on nickel..."; J. Chem. Phys.(2001) 115, pp. 5611-5619	-
ADD	30	HASEGAWA, Y., et al.; "Modification of electron ... standing wave ... Pd ...; Surf. Sci., in press, 11 April 2002	-
ADD	31	HENRY, Claude R.; "Catalytic activity ... nanometer-sized metal clusters"; Applied Surf. Sci., 164, (2000) pp 252-259	-
ADD	32	HESS, S., et al.; "Hot Carrier Relaxation ... Phonon Scattering in GaN"; http://www.physics.ox.ac.uk/taylor/images/hot%20carrier%20poster.pdf (Date Unknown)	-
ADD	33	HO, Wilson; http://www.laspp.cornell.edu/laspp_data/wilsonho.html (Date Unknown).	-

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/442,684-G25, 901
		Filing Date	3/19/2002 7/23/2003
		First Named Inventor	Anthony C. Zupercio
		Group Art Unit	1753
		Examiner Name	Diamond, Alan D.
		Attorney Docket Number	22122878-12
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ADD	34	HOHLFELD, J, et al.; "Electron and lattice dynamics ... optical excitation of metals"; Chemical Physics, 251 (2000) pp 237-258	-
ADD	35	HONKALA, Karolina, et al.; "Ab initio study of O2 precursor states on the Pd(111)..."; J. Chem. Phys. (2001) 115, pp. 2297-2302	-
ADD	36	HOU, H.; Y., et al.; "Chemical Interactions of Super-Excited Molecules on Metal Surfaces"; http://www2.chem.ucsb.edu/~wodtke/papers/dan1.pdf (Date Unknown).	-
ADD	37	HOU, H., et al.; "Direct multiquantum relaxation of highly vibrationally excited NO ..."; J. Chem. Phys., 110, (1999) pp 10660 - 10663	-
ADD	38	HUANG Y., et al.; "Observation of Vibrational Excitation and Deexcitation for NO from Au(111) ..."; Phys. Rev. Lett., 84, (2000) pp 2985 - 2988	-
ADD	39	HUANG, Yuhui, et al.; "Vibrational Promotion of Electron Transfer"; SCIENCE, VOL 290, 6 OCTOBER 2000, pp 111 - 113	-
ADD	40	IBH; "NanoLED overview"; http://www.ibh.co.uk/products/light_sources/nanoled_main.htm (Date Unknown).	-
ADD	41	IBH; "Red picosecond laser sources"; http://www.ibh.co.uk/products/light_sources/nanoled/heads/red_laser_heads.htm (Date Unknown).	-
ADD	42	IFTIMIA, Ilana, et al.; "Theory ... scattering of molecules from surface"; Phys. Rev. B (2002) 65, Article 125401	-

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Substitute for form 1448B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/142,674 625,801
		Filing Date	5/10/2002 7/23/2003
		First Named Inventor	Anthony C. Zuppero
		Group Art Unit	1753
		Examiner Name	Diamond, Alan D.
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ADD	43	ISHIKAWA, Yasuyuki, et al.; "Energetics of H ₂ O dissociation and COads+OHads reaction .. Pt."; Surf. Sci. preprints SUSC 12830, 27 April 2002	-
ADD	44	JOHNSON, R. Colin; "Molecular substitution ...terahertz switch arrays"; EE Times, (04/10/00, 3:35 p.m. EST) http://www.eet.com/story/OEG20000410S0057	-
ADD	45	KAO, Chia-Ling, et al.; "The adsorption ... molecular carbon dioxide on Pt(111) and Pd(111)"; Surf. Sci., (2001) Article 12570	-
ADD	46	KATZ, Gil, et al.; "Non-Adiabatic Charge Transfer Process of Oxygen on metal Surfaces"; Surf. Sci. 425(1) (1999) pp. 1-14	-
ADD	47	KAWAKAMI, R. K., et al.; "Quantum-well states in copper thin films"; Nature, 398, (1999) pp 132 - 134	-
ADD	48	KOMEDA, T., et al.; "Lateral Hopping of Molecules Induced by Excitation of Internal Vibration..."; Science, 295, (2002) pp 2055-2058	-
ADD	49	LEWIS, Steven P., et al.; "Continuum Elastic Theory of Adsorbate Vibrational Relaxation"; J. Chem. Phys. 108, 1157 (1998)	-
ADD	50	LEWIS, Steven P., et al.; "Substrate-adsorbate coupling in CO-adsorbed copper"; Phys. Rev. Lett. 77, 5241 (1996)	-
ADD	51	LI, Shenping, et al.; "Generation of wavelength-tunable single-mode picosecond pulses ..."; Appl. Phys. Lett. 76, (2000) pp 3676 - 3678	-

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		Filing Date	5/10/2002 7/23/02
		First Named Inventor	Anthony C. Zuppero
		Group Art Unit	1753
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ADD	52	MITSUMI, T., et al.; "Coadsorption and interactions of O and H on Pd(111)"; Surf. Sci., Article 12767, (2002)	-
ADD	53	MOULA, Md. Golam, et al.; "Velocity distribution of desorbing CO ₂ in CO oxidation on Pd(110)..."; Applied Surf. Sci., 169-170, pp 268-272 (2001)	-
ADD	54	MULET, Jean-Philippe, et al.; "Nanoscale radiative heat transfer between a small particle ..."; Appl. Phys. Lett., 78, (2001) p 2931	-
ADD	55	NIENHAUS, H, et al.; "Direct detection of electron-hole pairs generated by chemical reactions on metal surfaces"; Surf. Sci. 445 (2000) pp 335-342	-
ADD	56	NIENHAUS, H.; "Electronic excitations by chemical reactions on metal surfaces"; Surf. Sci. Rpts. 45 (2002) pp 1 - 78	-
ADD	57	NIENHAUS, H., et al.; "Selective H atom sensors using ultrathin Ag/Si Schottky diodes"; Appl. Phys. Lett. (1999) 74, pp. 4046-4048	-
ADD	58	NIENHAUS, Hermann; "Electron-hole pair creation by reactions at metal surfaces"; APS, March 20-26, 1999, Atlanta, GA, Session SC33 [SC33.01]	-
ADD	59	NIENHAUS, H, et al.; "Electron-Hole Pair Creation at Ag and Cu ... of Atomic Hydrogen and Deuterium"; Phys. Rev. Lett., 82, (1999) pp. 446-449	-
ADD	60	NOLAN P. D., et al.; "Direct verification of... precursor to oxygen dissociation on Pd(111)"; Surf. Sci. v. 419(#1) pp. L107-L113, (1998)	-

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ADD	61	NOLAN, P. D., et al.; "Molecularly chemisorbed intermediates to oxygen adsorption on Pt ..."; J. Chem. Phys. 111, (1999), pp 3696 - 3704	-
ADD	62	NOLAN, P. D., et al.; "Translational ... Precursors to Oxygen Adsorption on Pt(111)"; Phys. Rev. Lett., 81, (1998) pp 3179 - 3182	-
ADD	63	OGAWA, S., et al.; "Optical and Femtosecond Dynamics in Ag/Fe(100) Quantum Wells"; Phys. Rev. Lett. 88, 116801 (2002)	-
ADD	64	PAGGEL, J. J., et al.; "Quantum-Well States as Fabry-Pérot Modes in a ..."; Science, 283, (1999), pp 1709 - 1711	-
ADD	65	PAGGEL, J. J., et al.; "Quasiparticle Lifetime ... Ag/Fe(100) Quantum Wells"; Phys. Rev. Lett. (1998) 81, pp. 5632-5635	-
ADD	66	PAGGEL, J.J., et al.; "Quantum well photoemission from atomically uniform Ag films ..."; Applied Surf. Sci., 162-163, (2000), pp 78-85	-
ADD	67	RETTNER, C. T., et al; "Dynamics ... chemisorption of O2 on Pt(111)... chemisorbed precursor..."; J. Chem. Phys. (1991) 94, pp. 1626-1635 (abstract only)	-
ADD	68	RINNEMO, Mats; "Catalytic Ignition and Kinetic Phase Transitions"; 1996; http://www2.lib.chalmers.se/cth/diss/doc/9596/RinnemoMats.html	-
ADD	69	ROBERTSON, A. J. B.; "Catalysis of Gas Reactions by Metals"; Logos Press Limited; 1970; LC # 70-80936; pp. 1-5, 10, 41; Great Britain, Adlard & son Ltd	-

Examiner
Signature

Alan D. Diamond

Date

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ADD	76	SVENSSON, K., et al.; "Dipole Active Vibrational Motion in the Physisorption Well"; Phys. Rev. Lett., 78, (1997) pp 2016-2019	-
ADD	77	TARVER, Craig M.; "Non-Equilibrium Chemical Kinetic ... Explosive Reactive Flows"; Fall 1999 IMA Workshop: High-Speed Combustion in Gaseous and Condensed-Phase	-
ADD	78	TAYLOR, R.A., et al.; "Strong Electron-LO Phonon Scattering and Hot Carrier Relaxation in GaN"; http://www.physics.ox.ac.uk/rtaylor/images/ha249kw3.pdf (Date Unknown).	-

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/142,684 G25,801
		Filing Date	5/10/2002 7/23/2003
		First Named Inventor	Anthony C. Zuppero
		Group Art Unit	1753
		Examiner Name	Diamond, Alan D.
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ADD	83	TRIPA, C. Emil; "Special Adsorption and Reaction Effects at Step Defect Sites on Platinum ..."; http://www.chem.pitt.edu/thesis.html#tripa (abstract only) (Date Unknown).	-
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ADD	85	WATSON, D.T.P., et al.; "Isothermal and temperature-programmed oxidation of CH over Pt..."; Surf. Sci. preprint, year 2001	-
ADD	86	WATSON, D.T.P., et al.; "Surface products of the dissociative adsorption of methane on Pt ..."; Surf. Sci. preprint, c. October 2001	-

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